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ORIGINAL

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Advanced Television Systems	)	
and Their Impact Upon the	)	**MM Docket No. 87-268**
Existing Television Broadcast	)	
Service	)	
	)	
Fifth Further Notice of	)	
Proposed Rule Making	)	

REQUEST TO ACCEPT LATE-FILED REPLY COMMENTS

The Digital HDTV Grand Alliance hereby requests the Federal Communications Commission to accept the attached late-filed Reply Comments in the above-captioned proceeding.

Reply Comments were due on August 12, 1996, however last-minute computer problems caused our representative to arrive at the Commission shortly after the Secretary's office had closed.

These Reply Comments are being filed the following morning, and we believe no party to this proceeding will be prejudiced by this late submission. Accordingly, in the

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interest of obtaining a full public record on this important matter, we respectfully request the Commission to accept the attached Reply Comments of the Digital HDTV Grand Alliance.

Respectfully submitted,

The Digital HDTV Grand Alliance

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August 13, 1996

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REPLY COMMENTS OF THE DIGITAL HDTV GRAND ALLIANCE

August 12, 1996

SUMMARY

A great majority of the commenters in this proceeding, including a multitude of terrestrial broadcasters, broadcast organizations, consumer electronics manufacturers, and others, join the Grand Alliance in emphatically endorsing the Commission's tentative decision to adopt the ATSC DTV Standard as the single, complete transmission standard for use by digital broadcast television licensees. Indeed, virtually every party *directly involved* in the provision of terrestrial broadcast television service strongly endorses the need to set a standard, and enthusiastically supports the Advisory Committee's recommendation to adopt the ATSC DTV Standard.

By contrast, a minority of commenters, *none of whom are directly involved* in the provision of broadcast television service, urges the Commission either to adopt only portions of the recommended standard, or not to adopt any standard at all, and some oppose the ATSC DTV Standard in particular. However, the arguments raised against adopting a standard and the complaints specifically lodged against the ATSC DTV Standard are unsound and unconvincing, and demonstrate a remarkable disregard for the Commission's primary objective in this proceeding -- to upgrade the technical quality of broadcast television in order to help preserve free over-the-air television service in the decades to come.

Some members of the computer industry, in particular, mount an all-out assault on the standard, first cloaking their opposition to it in supposedly grave concerns about the dire impacts of standards adopted by government fiat. But adoption of the standard will in no way be a decision by government fiat. The comments on the NPRM reflect virtually unanimous support for the standard within the broadcast television industry and overwhelmingly confirm the wisdom of mandating a single, complete standard. Moreover, the vociferous opposition by these computer companies to the ATSC DTV Standard itself makes it crystal clear that what they actually oppose is the Advisory Committee's recommendation itself.

Even a cursory review of the comments of these computer companies reveals the real kernel of their complaint, i.e., that the standard was not designed *exclusively* to meet their narrow needs. They claim, erroneously, that the proposed standard does not provide adequate interoperability with computers, yet they stubbornly refuse to recognize the many other interoperability needs that the standard must satisfy (e.g., with cable, DBS, and existing NTSC services), or even the essential needs of the primary broadcast television application. Moreover, their complaints about a lack of interoperability with computers are entirely unfounded and completely misdirected when aimed at the ATSC DTV Standard -- unquestionably the most computer-friendly television system on the planet. Ironically, while their complaints about interoperability risk delaying the introduction of digital terrestrial broadcast television here, far less interoperable digital systems are being adopted and deployed in the U.S. and throughout the world.

In opposing the recommended standard, these members of the computer industry offer cost estimates in an unavailing effort to show that the ATSC Standard would cost consumers many billions more in the aggregate than a supposedly simpler, less expensive alternative offered by them. But their cost estimates are embarrassingly flawed, combining greatly overestimated unit costs with grossly overstated consumer sales volumes to produce a very high number that has absolutely no basis in reality. In addition, another key fallacy underlying their complaints is the completely mistaken notion that the ability to decode all of the ATSC DTV formats, including the HDTV formats, will make receivers prohibitively expensive for most consumers.

In fact, the attached detailed, reliable cost estimates prepared by members of the Grand Alliance who have had extensive experience manufacturing and selling equipment using similar technology, show that the ATSC DTV Standard will allow consumers to purchase a range of cost-effective DTV receivers and converters, and that at both the low and high ends of this performance range, prices to consumers will be *lower* than they would be under the allegedly less expensive alternative suggested by these computer companies.

The alternative they offer is a layered system that would initially only provide "affordable" standard-definition ("SDTV") capability as part of the standard adopted by the Commission, but they assert that broadcasters could add additional layers to the bit stream later when HDTV becomes affordable, if there is a demand. They claim this is a far better approach, yet as far as we know, not a single broadcaster in the nation, nor any other party directly involved in the provision of broadcast television service, has embraced their proposal. That is because the proposal completely ignores the needs of broadcasters and the rest of the television industry, beginning with two critical requirements.

First, notwithstanding the host of other valuable services that a digital television system can provide, the principal goal of broadcasters and of the Commission in this endeavor is to upgrade *significantly* the technical quality of broadcast television so that free over-the-air television service can compete with other means of delivering video in the years and decades ahead. This means that broadcasters must have HDTV capability *guaranteed* in any DTV standard from day one. And as our attached cost estimates demonstrate, contrary to the mistaken assumption of these computer companies, HDTV will be eminently affordable to consumers from the beginning of the transition, especially in light of the dramatic benefits it delivers.

Second, investors, broadcasters, manufacturers, and consumers need a complete, proven, tested standard in order to move forward. The industry has spent well over $500 million and most of a decade to satisfy this need. To suggest at this late date that broadcasters or anyone else involved in this historic process accept a last-minute, unproven, unembodied proposal with dubious performance claims is quite simply a non-starter. Indeed, if the Commission were to halt this process to evaluate one proposal, it would have to invite and evaluate competing proposals as well, and to start all over again the process of proposing, evaluating, constructing, testing and selecting from competing systems, based on these unreliable and unsubstantiated claims, would thwart the conversion to digital broadcast television, would squander the opportunity to reclaim valuable television spectrum, and

would spell failure for the Commission. For the Commission to delay now would be to renege on its oft-repeated commitment to establish a standard, and would mean turning away from its covenant to help preserve free over-the-air television in the years and decades to come.

Indeed, neither the computer companies' alternative, nor anything else in the voluminous comments on the NPRM provides a sound basis for changing the Commission's tentative decision to adopt the ATSC DTV Standard as the single standard for use by digital broadcast television licensees. In fact, the comments demonstrate conclusively that the Commission should fully embrace the recommendation of its Advisory Committee and adopt the ATSC DTV Standard in its entirety. We have the world's best terrestrial broadcast television technology firmly in hand, with proven performance and tremendous flexibility and headroom for growth. By adopting the ATSC DTV Standard now, the Commission will unleash a flurry of investment within the involved industries that will support a rapid implementation of digital broadcast television, quickly bringing the fruits of this beneficial new technology to the American public.

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REPLY COMMENTS OF THE DIGITAL HDTV GRAND ALLIANCE

I. Introduction

The *digital* HDTV Grand Alliance ("Grand Alliance") hereby replies to the comments filed on July 11, 1996 in response to the Commission's Fifth Further Notice of Proposed Rule Making ("NPRM") in its Advanced Television ("ATV") proceeding.

In our initial comments, we enthusiastically endorsed the Commission's tentative decision to adopt in its entirety the ATSC DTV Standard based on the Grand Alliance HDTV system and recommended by the Commission's Advisory Committee on Advanced Television Service ("Advisory Committee"). We stated our strong belief that *mandating* the use of the *complete* DTV standard by digital broadcast licensees is necessary in order to provide the clarity, certainty and stability necessary for investors, broadcasters, manufacturers and consumers to invest in digital television.

We praised the Commission for developing and shepherding a unique and fruitful process over the past decade where government leadership and key policy decisions have

been combined with broad participation, investment and competition by a wide range of interested parties in the private sector to deliver the world's best digital television technology. We urged the Commission to follow through on its commitment to set a standard in order to galvanize action in the various industries involved in upgrading the nation's broadcast television infrastructure.

We stated our firm conviction that the ATSC DTV Standard represents by far the world's best digital broadcast television system, with unequaled flexibility, unprecedented ability to incorporate future improvements, *and unmatched interoperability with computers and telecommunications*. We said it is the best possible standard to adopt and is more than fully adequate, surpassing the expectations of the Commission and the industries involved in the process. We pointed out that implementing this technology will help preserve free over-the-air television service in the future, will give consumers access to a host of potential new information services, will create and preserve high-paying jobs and engender substantial economic growth, and will enable the Commission to recover and reuse large blocks of extremely valuable spectrum.

Finally, we recognized the strong industry consensus supporting the Advisory Committee recommendation, and urged the Commission to adopt the proposed standard as swiftly as possible in order to unleash the further substantial investments necessary to bring the benefits of this bountiful new technology to the American people and to spread those benefits throughout the world.

A careful review of the extensive comments filed in response to the NPRM shows a broad consensus supporting the Commission's tentative decisions. The great majority of parties filing comments join the Grand Alliance in strongly endorsing the Commission's intention to establish a single, complete, mandatory transmission standard for broadcast DTV, and enthusiastically supporting the proposed ATSC DTV standard as the best possible choice and far more than fully adequate.

A minority of the commenting parties urge the Commission either to adopt only portions of the recommended standard, or not to adopt any standard at all. Some of these parties argue further that if the Commission does adopt a standard, it should not adopt the ATSC DTV Standard recommended by the Advisory Committee. We disagree, and view such arguments as misguided and unsound. In some cases they may reflect a desire to minimize any chance that the Commission might attempt to impose a DTV standard on non-broadcast video delivery industries. In other cases they disregard the Commission's primary objective in this proceeding -- to upgrade the technical quality of broadcast television in order to help preserve free over-the-air television service in the decades to come. Instead, these complaints flow from concerns with narrow, non-primary applications of the recommended standard to non-broadcast industries without any regard for the essential needs of the primary broadcast television application.

Moreover, as we discuss in these reply comments, the alleged inadequacies of the standard for supporting these non-primary applications are technically inaccurate and unfounded, and the cost estimates used to attack the ATSC DTV Standard and to support alternative approaches are demonstrably fallacious. In fact, reliable cost estimates included in these reply comments show conclusively that the ATSC DTV Standard will allow consumers to purchase a range of cost-effective DTV receivers and converters, and that at both the low and the high ends of this performance range, prices to consumers will be *lower* than they would be under the allegedly less expensive alternative proposed by some members of the computer industry.

The Commission should dismiss the arguments against adopting a single, complete DTV standard for broadcast television transmission and against the ATSC DTV Standard specifically, should recognize the hard-won and strong consensus of the parties most directly affected in favor of setting the full ATSC DTV Standard, and should adopt the recommendation of its Advisory Committee at once and signal the involved industries to

commence the rapid implementation of digital broadcast television, so that American consumers can soon enjoy the fruits of this beneficial new technology.

II. The Commission's Proposal to Mandate Use of the Full ATSC DTV Standard Is Essential

A. The Commission Should Mandate a Standard

In our initial comments, the Grand Alliance explained that a standard is required in order to provide the clarity, certainty and stability necessary for broadcasters, manufacturers and consumers to invest in digital television, that a clear, unambiguous standard is necessary to provide a reliable basis for the design of broadcast and consumer equipment, and that an FCC requirement *mandating* the use of the DTV standard by digital broadcast licensees is necessary to achieve these goals.

The great majority of commenters strongly supported a mandated standard, stressing the same points. For example, the U.S. Department of Commerce and National Telecommunications and Information Administration ("NTIA") at 1, explains that:

> "Digital television promises American consumers a greatly improved and very flexible television service, one that will include the ability to receive a range of new and exciting services. Digital television also promises myriad benefits for the U.S. economy. These benefits will accrue, however, only if the Commission acts rapidly to adopt a digital television transmission standard so that the transition to digital television can begin promptly.
>
> Commission adoption of a transmission standard will provide certainty to consumers, broadcast licensees, and equipment manufacturers, which in turn will help alleviate the "chicken and egg" problem inherent in adoption of any totally new system. The knowledge that equipment will not soon be rendered obsolete will encourage rapid investment in the new system, investment that is needed to facilitate the transition to digital. Adoption of a transmission standard also will eliminate the need to purchase duplicative equipment or numerous conversion devices, thus keeping consumer, broadcaster, and manufacturer costs down. One need only look to America's experience with AM stereo to realize that the acceptance and likelihood of

success of new broadcast technologies are greatly enhanced when a standard is adopted."[1]

Similarly, 91 broadcasters and broadcast organizations describe in convincing detail why a standard is essential, saying "[t]he wide array of players critical to the success of DTV will not participate in the transition to DTV unless they are confident that there is a real opportunity for a *comprehensive* transition. Establishing a standard is the most important step to be taken toward securing the confidence of *producers . . . , equipment manufacturers . . ., investors and financial institutions . . . , broadcasters . . .*, and *consumers . . .*." (Broadcasters' Comments at *i*, *ii*, 1-2, 15-20, emphasis in original.) The National Consumers League (at 1) also urges the Commission to adopt the proposed transmission standard for HDTV, saying "[w]e agree that manufacturers of digital receivers and broadcasters need certainty before they will make the required investments for HDTV. Consumers also need certainty more than anyone else, for it will be consumers who will drive the marketplace."

Numerous other parties offer similar compelling arguments urging the Commission to adopt a single standard, including the Advanced Television Systems Committee ("ATSC") (at *i*, 2, 6), the Electronic Industries Association and EIA Advanced Television Committee ("EIA/ATV") (at *ii*, 7), the Advanced Television Technology Center ("ATTC") (at 2-3), Thomson Consumer Electronics (at 1, 4), Zenith Electronics (at 2-5), General Instrument (at 2-3), Philips Electronics North America (at *iv*, 1, 3-6), Dolby Laboratories (at 3), Tektronix (at 2), Sony Electronics (at 1, 7, 8, 11), Hitachi America (2-4), Mitsubishi Consumer Electronics America ("MCEA") (at *i*, 2), Matsushita Electric Corporation of America

[1]Many other parties, as well, urge the Commission not to repeat the stereo AM debacle by failing to set a single standard. *See* Comments of the Executive Office of the President, Office of Science and Technology Policy at 2; Comments of 91 Broadcast Organizations at *ii*, 19; Advanced Television Systems Committee Comments at *ii*, 12; Thomson Consumer Electronics Comments at 7, fn. 1; Philips Electronics Comments at *iv*, 6, 8; Matsushita Electric Corporation of America Comments at 4; Sony Electronics Comments at 1; and Comments of Hammett & Edison at 4. The Computer Industry Coalition on Advanced Television Service ("CICATS") claims that not mandating a standard would not repeat the AM Stereo problem, because in this case there is motivation to establish a voluntary standard, since once NTSC transmissions cease, consumers will be forced to upgrade in order to receive TV. This logic of this claim is circular and unavailing. The Commission certainly would not order NTSC transmissions to cease if the transition to DTV had not been successful because of confusion and uncertainty caused by the lack of a standard.

("MECA") (at 2, 6), Advanced Broadcasting Systems of Canada ("ABSOC") (at 2), Citizens for HDTV (at 4, 12), the Department for Professional Employees, AFL/CIO (at 1), the Association of Federal Communications Consulting Engineers ("AFCCE") (at 2), Hammett & Edison ("H&E") (at 1), Cohen, Dippell and Everist ("CD&E") (at 4, 5), Circuit City (at 3, 5), Jae Lim (at 1), and John Carroll (at 1, 4).

Several parties stress the positive impacts on jobs and economic development that will flow from a Commission decision to adopt a standard. For example, OSTP (at 3) states "There is a well known maxim of the international technology [marketplace:] international capital and R&D investment, technical and creative talent, new manufacturing, plant siting, and resulting job growth all flow to the country that grabs the early technological lead," and NTIA (at 1) notes that "[a]doption of a digital transmission standard promises to spur the American economy in terms of manufacturing, trade, technological development, and international investment -- including job growth." Philips (at 2), Thomson (at 2) and Citizens for HDTV (at 5, 8, 16-17) echo these views.

Some parties who generally support the specific ATSC DTV Standard, but with one or more caveats, also support the need for a mandated standard. For example, Polaroid (at 2) and the Information Technology Industry Council ("ITI"), a leading computer industry trade association, (at 2) support a mandated standard, but object to any inclusion of interlaced formats. Similarly, Universal Studios (at 2) supports FCC adoption of the standard, but urges against the exclusive use of a single audio system, while TelQuest Systems (at 2-3, 6) gives a strong endorsement of the need for a standard and endorses the ATSC standard, except for mandating VSB modulation. And although he objects to some aspects of the recommended standard, William Schreiber (Vol. II at 1) says that a mandated standard is absolutely essential at the outset of the service in order to provide certainty.

In sharp contrast to this prevalent view endorsing a mandated standard, the National Cable Television Association ("NCTA") (at 1), joined by Tele-Communications, Inc. ("TCI") (at 1), says it would be an irreversible mistake for the government to adopt a federal

technology standard for digital TV, noting "well-established drawbacks" of freezing technology and innovation, and reducing competition and consumer choice. NCTA (at 4-5) acknowledges the hard work of the Advisory Committee, in which they participated fully, but states that even when advised by industry representatives, the government should not substitute its judgment for that of the marketplace. NCTA argues that a thriving market is developing in cable and DBS without any government standard, and NCTA and TCI both note the error that would have been made if an analog HDTV standard had been rushed through before all-digital capability was proven.[2]

The Grand Alliance members speculate that this somewhat surprising opposition by the cable industry to FCC adoption of a *terrestrial broadcast* standard may flow from its concerns that the Commission might impose the same DTV standard on cable, as indeed some parties have proposed. This is unfortunate, because as we explained in our initial comments (at 27), we believe that as *voluntary* standards activities continue in the cable industry and with other video delivery systems, it is likely that many elements of the terrestrial ATV standard will also be incorporated in emerging standards in these industries. We believe that such *voluntary* standards will promote the early availability of digital television, including HDTV, over all of these other media as well as terrestrial broadcasts, without causing undue burdens on cable operators or other providers. Indeed, the ability of these other competitive delivery media to introduce compelling new technologies without FCC review and approval will continue to provide pressure to ensure that universal broadcast television service implements the technology required to remain responsive to consumer needs.

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[2]The recent dramatic success of digital DBS illustrates the strong consumer demand for the improved technical quality and greater program choices available through digital television technology. In considering the different case of universal, free over-the-air broadcast television, however, the digital DBS experience highlights the need for a single standard. Presently, each competing DBS service utilizes different receiving equipment, incompatible even for the same intended use. If customers wish to change DBS providers, they must scrap their investment and purchase new receiving equipment. This model may be effective for a subscription, premium service like DBS, but it would be totally unacceptable for universal free over-the-air television.

The above notwithstanding, the Commission needs to establish a *terrestrial broadcast* transmission standard. First, the Commission is not being asked to substitute its judgment for that of the marketplace, but rather to endorse and adopt a broad industry consensus that will allow all parties to move forward confidently and productively in the rapid implementation of digital broadcast television. Indeed, the cable industry has contributed mightily to developing, evaluating and testing that consensus, and does not oppose the ATSC DTV Standard for terrestrial broadcast transmission. Second, adopting the ATSC DTV Standard will *not* freeze technology and innovation, nor reduce competition and customer choice. As explained at length in our initial comments, the ATSC DTV Standard based on the Grand Alliance system offers unprecedented flexibility to accommodate new applications and uses, and unmatched headroom for growth to include new technological improvements. Third, rapidly adopting a broadcast DTV standard now would be nothing like rushing to adopt analog HDTV before the advent of all-digital capability. We have the world's best terrestrial broadcast television technology firmly in hand, with proven performance and tremendous flexibility and headroom for growth. For the Commission to delay now would be foolish, and would mean turning away from its obligation to help preserve free over-the-air television in the years and decades to come.

Comments by the members of the computer industry are mixed regarding the advisability of setting a standard. ITI (at 1) urges the Commission promptly to adopt and implement a standard, along with policies to stimulate the development of National Information Infrastructure ("NII") applications, although it favors the exclusive use of progressive scan transmission formats.

In sharp contrast, several other computer industry commenters strongly urge the Commission not to mandate a DTV transmission standard. Microsoft (1-2) says imposing the ATSC DTV Standard would be a public policy disaster, and that the marketplace, not government, is the best avenue for development of a DTV standard. The Business Software

Alliance ("BSA") (at 1-2, 6) echoes these sentiments, but says that it has no objection to standards adopted through industry consensus.[3],[4]

The Computer Industry Coalition on Advanced Television Service ("CICATS") (at *i*, 1-2)[5] urges the Commission not to adopt a DTV standard, especially not the ATSC DTV Standard, favoring voluntary standards instead. However, if the Commission does adopt a standard, it should adopt the minimum standard necessary to protect spectrum users from interference, and if more is adopted, the Commission should adopt no more than the CICATS "refinement" of the Advisory Committee recommendation, i.e., a single baseline standard-definition (SDTV) format, leaving any further enhancements to the marketplace.[6] CICATS (at 10) says the U.S. should not rush in to set a standard because technology is changing so rapidly.

Compaq (at *i-ii*, 1-2) also urges the FCC to reject the ATSC DTV Standard, saying any mandated standard would disserve the public interest, by stifling innovation and inhibiting competition, but if the Commission insists on adopting a standard, it should adopt the CICATS proposal. Compaq (at 6, 10) argues that voluntary industry standards can provide sufficient certainty, and that all parties have incentives for adopting a voluntary standard, because broadcast television is an established service.

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[3]BSA (at 8) further adds that imposing standards on computer hardware or software would be disastrous. Of course, neither the Commission nor anyone else in this proceeding is proposing this, except that some members of the computer industry urge the Commission to impose requirements on TV *displays* and such requirements (which we oppose), if adopted, could be extended to computer displays in the case of convergent TV/PC products.

[4]BSA (at 7, fn. 11), among others, cites the Commission's recent decision not to mandate a standard for local telephone company number portability as a precedent for not establishing a broadcast television standard. The number portability situation is completely inapposite, affecting a small number of manufacturers and their customers, the telephone companies, but not telephone company end users or their equipment. Implementing this capability in telephone company central offices is not at all like implementing a universal open-system broadcast service offered by 1,600 providers to 250 million Americans using equipment provided by dozens of different manufacturers. *See also* NCTA (at 15).

[5]CICATS has fewer members than it did when it filed comments on the Fourth NPRM in this docket. CICATS now includes Apple, Compaq, Dell, Intel and Microsoft.

[6]Although CICATS objects mightily to the video formats of the standard, it states (at 14) that only these video formats would create material technological difficulties for the computer and software industries, and that if the Commission adopts a DTV broadcast standard, CICATS would not oppose adoption of the video coding, audio coding, packetized data transport, or RF/transmission components of the proposed standard.

Although some of these computer companies fill page after page describing dire consequences of government-imposed standards, their arguments miss the mark and are entirely unconvincing. The Commission is not being asked to substitute its judgment for that of the marketplace, but to endorse and adopt an extremely broad consensus joined in by virtually all of the participants who have a direct stake in upgrading the technical quality of terrestrial broadcast television. This is precisely the type of industry consensus to which BSA states it has no objection. In fact, it is these parties who are seeking a government mandate -- one that would mandate the exclusive use of progressive scan transmission formats and ban the use of the few interlaced scan formats that have been included in the proposed standard to meet interoperability needs of the television industry.

Furthermore, every participant in this decade-long historic process must either laugh or cry to hear the final stage of this effort characterized as "rushing in to set a standard." After an incredibly deliberate and careful process, evaluating competing proposals and then incorporating the best attributes of each, refining and improving digital video compression technology over the past six years, and building and exhaustively testing actual prototype equipment, we have undeniably the world's best digital television technology, with unmatched flexibility for additional applications and headroom for growth. While less capable digital TV systems are spreading throughout the world, it is ludicrous to urge that broadcasters turn away from the best, proven technology because something better will come in the future. All that is needed now is for the Commission to follow through on its commitment to set a standard, so that investors, broadcasters, manufacturers and consumers can all move forward together with certainty that their investments will be mutually beneficial.

OSTP (at 2) sums up the issue succinctly:

> "We recognize that some argue that the adoption of a single digital television standard would freeze the current state of technology. That is simply wrong. The ATSC DTV standard is sufficiently flexible that it can accommodate new developments in either interlace or progressive scan display formats. The

> FCC process always is open to review new alternative standards. In point of fact, a technological freeze will be occasioned only upon the *failure* to adopt a standard. The lesson of AM stereo should be clear to all of us: failure to adopt broadcast standards leads to failure to develop new broadcast services. American consumers and workers suffer." (emphasis in original)

Some members of the computer industry cloak themselves in opposition to government-imposed standards and in favor of voluntary standards instead, but their detailed, strident opposition to the Advisory Committee's recommendation -- an extremely broad industry consensus developed through an unprecedented, deliberate and totally open process -- makes crystal clear that it is the Advisory Committee's recommendation itself that they oppose, and their opposition to an FCC-mandated standard for broadcast television is nothing more than a convenient, self-serving vehicle to attempt to thwart rapid adoption of the proposed standard.

Indeed, the very architect of the CICATS counterproposal to the Advisory Committee recommendation makes this crystal clear by urging the Commission *not* to let the market decide, because that would mean getting the Advisory Committee standard. Instead, he urges the Commission to adopt a standard, but not to adopt the Advisory Committee proposal nor allow it. (Comments of DemoGraFX ("Demos") at 3.)

The Coalition of Film Makers (at *i*, 3), although misinformed and consequently misguided, we believe, in its opposition to the proposed standard, is at least straightforward, saying it's imperative for the FCC to adopt a standard, because failing to do so would result in a *de facto* standard developed by "foreign manufacturers" prepared to capture the U.S. market.[7]

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[7]This reference, unfortunately, is but one of several in the comments where detractors of the proposed standard have attempted to recruit support by mischaracterizing and discrediting the work of the Advisory Committee, calling it some kind of plot by foreign manufacturers. *See, e.g.,* Comments of the American Homeowners Foundation at 1-2. In the first place, it is the Advisory Committee and especially broadcasters who have dictated the specifications for the standard, including requiring substantial modifications to the original Grand Alliance proposal. Secondly, all of the seven Grand Alliance members are U.S. corporations and institutions, and the three members who have been acquired in whole or in part by foreign corporations continue to maintain extensive R&D and manufacturing facilities in the U.S., collectively employing tens of thousands of American workers in their operations. And the same can be said of many other manufacturers who are not members of the Grand Alliance but have labored mightily alongside broadcasters and others in the Advisory Committee

Many parties note the special nature of free over-the-air broadcasting which makes it essential that the Commission adopt a standard.[8] General Instrument (at 4) argues that the general issue of the proper role of the FCC in setting standards should be examined in a separate proceeding, but that the universal broadcast system is not the place for application of a new policy. MECA (at 5-6) says it's legitimate and proper for broadcasters to request the FCC to facilitate this transition, and argues that failure to act would likely bring no standard or a less inclusive *de facto* standard. Hitachi America (at 3, 5, 6) points out that failure to adopt a standard will sacrifice the U.S.'s hard-won leadership position, and that concerns re stifling innovation and limiting competition, and fears that rapid advances will soon render the standard obsolete are unwarranted. ATSC (at *ii*, 11) and Dolby (at 3) also extol the flexibility and extensibility of the standard, stating that concerns regarding obsolescence of the standard are greatly exaggerated. And EIA/ATV (at *ii*, 5) and ATTC (at 4-6) stress the value of a mandated transmission standard to spur price and features competition that will build sales volumes and lower prices to consumers.

TCI (at 2, 6-8) and NCTA (Owen Appendix at 14) argue that if the Advisory Committee is correct in claiming there is no superior alternative, then the market will adopt the proposed ATV standard without any FCC mandate. This argument misses the point. While there is a strong consensus supporting the proposed standard among the most directly affected parties, adoption of a single standard by the Commission is still necessary to give the confidence and certainty to the many different groups who need to make timely, mutually reinforcing investment decisions. And at this point, positive Commission action is needed

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process. *See, e.g.,* Grand Alliance Reply Comments in the Fourth NPRM in this proceeding, January 22, 1996. Finally, this proceeding is not about computers vs. televisions, but about upgrading the quality of free over-the-air television service, including the ability to offer a host of new information services to consumers, and the ATSC DTV Standard accomplishes all of these objectives admirably, without conveying advantages or disadvantages to any industry.

[8]*See, e.g.,* Broadcasters Comments at 15-20, Thomson Comments at 5, Zenith Comments at 4, General Instrument Comments at 3, Philips Comments at 4-5, MECA Comments at 6, EIA/ATV Comments at 6, ATSC Comments at 7, ATTC Comments at 2, Citizens for HDTV Comments at 6, Benton Foundation Comments at 4, and Consumer Federation of America/Media Access Project ("CFA/MAP") Comments at 2.

more than ever to dispel uncertainty and avoid delay, in light of the strong (though unfounded) objections by some members of the computer industry. As we explained in our initial comments (at 8), removing the assumption that the Commission would mandate a single standard would constitute an eleventh-hour reversal of the Commission's policy, and would threaten the industry consensus and inject a great deal of uncertainty, risk and delay into the process, jeopardizing a swift transition to digital television and the rapid recovery of valuable television spectrum. The Broadcasters (at 20), Thomson (at 5), Hitachi America (at 4), and ATSC (at 8) all agree, arguing convincingly that the existing broad consensus doesn't negate the need for a mandatory standard.

Finally, several parties stress the importance of the Commission keeping its commitment to adopt a standard. For example, William Schreiber (Vol. II at 2) states "[a]fter all this time and effort, a statement by the Commission that no new standard is needed would be greeted with dismay. It would make it very difficult to carry out a similar process in the future. In effect, the Commission has asked the industry to develop a new standard, and the industry has complied. The Commission should therefore issue a new standard," but should scrutinize the proposal with great care. General Instrument (at 2, 5) similarly urges the Commission to act, saying "[i]ndustry has committed vast financial and manpower resources in the valid expectation that the Commission would adopt a standard for advanced television. Industry shouldered the burden of minimizing technical uncertainty with the expectation that the Commission would shoulder the burden of minimizing marketplace uncertainty. MECA (at 13) urges the Commission to "continue to act in good faith, as it always has, with industry by moving rapidly forward and adopting the full ATSC ATV standard." The Broadcasters (at 21), Zenith (at 17), Thomson (at 17), ATSC (at *iv*, 33), and Sony (at 9) also make similar comments urging the Commission to honor its covenant with the industry to adopt a DTV standard.

The weight of all of these comments clearly demonstrates that the Commission should indeed act as rapidly as possible to finalize its tentative decision to mandate a single DTV transmission standard.

B. The Full ATSC DTV Standard Should be Adopted

Most parties join the Grand Alliance in urging the Commission to adopt the proposed standard in its entirety, rejecting the idea that only adopting some layers of the standard might have merit. However, some critics of the standard urge the Commission to adopt only certain parts of the standard, if it adopts anything at all.

Michael Bove, *et al* (at 1) advise the Commission to specify a modulation standard and a bitstream layer transmission standard only. Intel (at 8) says the Commission should require an RF/transmission layer once its ability to transmit executable code is confirmed, leaving the market to determine the most efficient coding and compression technologies. Microsoft (at 3) argues that if the Commission adopts a standard at all, it should do so only to the extent necessary to prevent interference, or it should adopt a modified version. Microsoft (Mundie statement at 7) also states that it would not object to a standard that included a modulation technique and a low-level bitstream format absent a specified video format.[9]

The Benton Foundation (at 3) urges the Commission to adopt no more than the minimal rules needed to protect spectrum users from interference, but that if the Commission must adopt more, it should adopt SDTV which allows multiple programs, and not HDTV which doesn't increase the number of voices and shouldn't be mandated, but should only be able to be chosen as a costly option.[10]

The Broadcasters (at *ii*, 2, 23) oppose partial adoption, saying there is no risk inherent in adopting the entire standard because of its flexibility and headroom for improvement.

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[9]As noted previously, CICATS opposes the video formats of the standard, but would not oppose the other layers of the ATSC DTV Standard.

[10]Our Comments and Reply Comments on the Fourth NPRM in this proceeding demonstrate in detail why HDTV, not SDTV, is and should be the centerpiece application of DTV. Moreover, as we show later in these comments, implementing the full ATSC DTV Standard, including HDTV, permits a range of options for consumers, including low-cost options.

They say that no potential innovation has been identified that the proposed standard cannot accommodate. Tektronix (at 3) says adopting the entire standard doesn't limit broadcasters, because additional standards such as data delivery can be used in place of or in addition to the video layer. MECA (at 2-3) stresses that the recommended standard is a total system, not a menu of subsystems, and that to change a piece would alter the balance of the carefully crafted whole. MECA (at 3) also notes the early Advisory Committee decision to evaluate and test complete working HDTV proposals, not partial or paper proposals. ATSC (at *i, ii*, 6, 9, 13) argues that all layers are required for the Commission to achieve all of its goals, and is joined by Sony (at 13) in noting that a full standard is required in order for the Commission to satisfy its statutory obligations to ensure that closed captioning and program rating (V-chip) services can be provided. CD&E (at 4-5) says the full standard provides a better basis for bilateral negotiations with Canada and Mexico. Thomson (at 1, 6, 7), Zenith (at 2, 3, 5, 7), MCEA (at 2), Hitachi America (at 6), Sony (at 2, 12), EIA/ATV (at *ii*, 2, 14), ATTC (at 6, fn. 4), and Citizens for HDTV (at 4, 12) also argue persuasively that the full standard should be adopted by the Commission.

As before, the weight of these arguments demonstrates conclusively that the Commission should act rapidly to *adopt all layers* of the ATSC DTV Standard. The Advisory Committee recommendation carefully considered exactly what should be included in the standard to be adopted and what should be left open for the marketplace to determine. Nothing in the comments suggests that any change in the recommendation would be appropriate or justified.

III. The ATSC DTV Standard Represents the World's Best Digital Television Technology and Is Far More Than Adequate

In the NPRM, the Commission asked whether the recommended standard is adequate to meet its policy objectives. In response, virtually all of the broadcasters, manufacturers and broadcast engineers directly involved in the broadcast television business, as well as many

other parties, extol the virtues of the proposed standard. In contrast, several members of the computer industry and the motion picture industry mount a variety of attacks on the proposal, and a coven of MIT researchers offer a variety of opinions regarding radically different approaches they might like to try if they were reinventing television service.

A theme of these divergent views is strikingly apparent from the comments: the parties opposing the ATSC DTV Standard consistently show a total disinterest in and disregard for the future of free over-the-air television, rarely if ever mentioning broadcasters and the challenges they face in bringing digital television to the public. Instead, these parties show a selfish and myopic concern for whether the standard is ideally suited to them, with no regard at all for the needs of other industries, and no recognition of the accommodations already made to meet their needs. Many of these parties do attempt to focus on the costs of receivers and converters for consumers, but they have been misinformed and led astray by erroneous assumptions about equipment costs and performance issues, believing unsubstantiated and unfounded assertions, mounting strenuous objections based on these demonstrably false assumptions, and ignoring the consensus solutions developed through solid scientific methods within MPEG and the Advisory Committee over the past several years. The Grand Alliance members believe that our reply comments and the comments of the many other parties who support the ATSC DTV Standard will demonstrate conclusively that the proposed standard is far more than fully adequate for its intended purposes, and should be adopted posthaste.

The Broadcasters (at *ii*, 3, 6) say the standard is universally acknowledged as exceptional, providing a wide range of functions today that can be extended to provide innovations in the future, and that its technical virtuosity maximizes spectral efficiency, interoperability and growth. They point out (at 9) that supporting multiple formats greatly expands the value of DTV to consumers while adding very little to the price of consumer

equipment.[11] ABSOC (at 9) says the standard meets key requirements, including flexibility and extensibility.

MECA (at 4) sees the proposed standard as representing the best digital video technology in the world. Hitachi America (at 2-3) also notes the standard's world leading technology and its provision for flexible evolution. EIA/ATV (at 8, 9, 15) argues that any notion that the standard might discourage innovation or impede competition is plainly mistaken, that it eliminates the threat of technological anarchy by providing a baseline for innovation, and that EIA/ATV is unaware of any service that the ATSC DTV Standard could not provide. H&E (at 1) finds the standard entirely adequate, with ample flexibility to accommodate future technological improvements. AFCCE supports the standard, noting its flexibility and interoperability features which ought to satisfy even those from non-TV industries who clamor for an inflexible standard based on a single scanning mode.

ATSC (at *i*, 2-3) calls the standard the best possible, more than fully adequate, with unmatched flexibility and extensibility, able to support a wide variety of information services in addition to news, sports, education and entertainment television. ATSC (at 11, 14) indicates that the standard offers the world's best digital television technology, and that concerns regarding obsolescence are greatly exaggerated. Philips (at 9) calls the standard a towering technological achievement. Thomson (at 2, 8) and Zenith (at 3, 7) also extol the virtues of the standard, noting its flexibility and headroom for growth, and arguing that adopting and implementing it will preserve free over-the-air TV, enable a host of NII applications, permit a more efficient refarming of television spectrum, and preserve and create jobs and engender economic growth.

[11]The broadcast community knows this, because they initiated and participated in Advisory Committee working groups focused specifically on this concern. Those parties who claim otherwise are simply misinformed and mistaken, as these comments will demonstrate.